



CASE STUDY
WORLD WIDE FITTINGS, INC

Staying Competitive on the Home Front

Sporting a name like World Wide Fittings, Inc. (WWF), you'd expect the Illinois-based manufacturer to have a global footprint, and indeed they do. With 11 facilities on three continents, WWF supplies steel and stainless hydraulic fittings for end users in construction, agriculture, heavy equipment and more.

What may be somewhat surprising in this day and age is the extent to which WWF is committed to maintaining manufacturing capabilities in the U.S.A.

Sean McCarthy, president and owner of the 70-year-old, family-run company, says having a domestic capability in today's environment provides a distinct advantage when fast delivery times are critical. "There are some serious shipping constraints involved in getting a container from China," he explains. "What used to take four to five weeks is now taking eight to 10 weeks. Having the ability to manufacture domestically is an important selling feature for our company."

The caveat, however, is that the domestic facilities must maintain a high level of productivity and efficiency to stay competitive. That led McCarthy and WWF to contact Mitsubishi Electric Automation, Inc. for an automation solution at their Vernon Hills, Illinois manufacturing plant.



WWF used Mitsubishi Electric's low-cost, high performance RV-8CRL articulated robot. The RV-8CRL enables them to run a CNC lathe for about four hours unattended.

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Turnkey Solution. Fast Cycle Times.

“We have some repetitive processes that we'd wanted to automate for a number of years,” McCarthy says, “but the cost was prohibitive. Hydraulic fittings are a commodity item. It's not high-end Instrumentation Fitting. We're selling Standard SAE Fitting. Mitsubishi Electric gave us an opportunity to expand into automation at a competitive level.”

The first process WWF targeted was a loading and unloading system for a CNC lathe used in facing small parts. Mitsubishi Electric won the contract by providing a comprehensive solution that included custom robotic loading/unloading components with an HMI controller, plus complete systems integration.

McCarthy admits, “That turnkey approach made us more comfortable. It was nice to have both the Mitsubishi Electric and integrator teams together working on the project. We didn't have to go out and find an integrator on our own.”

The other key factor in the equation was cycle time. “We have relatively short cycle times in that machining process. With some of the other solutions we considered, our cycle time was shorter than the automation turnaround. The Mitsubishi Electric solution was able to keep up with our manufacturing process.”

Loading Up On Efficiency

The solution includes a stand with a robotic arm, sophisticated sensors, and two sets of drawers: one that supplies first-stage pieces to the lathe and a second that receives the finished machined parts. Designed for four hours of unattended run time, first-shift workers can load a batch of unfinished product, press start, and not have to come back until lunch time to change out the drawers.

Better still, WWF Manufacturing Manager Adam Meinzer says, “you can actually unload finished parts and reload without disturbing or stopping the machine. The machine can still operate with the other trays for continuous manufacturing.”

Meinzer describes the solution as “kind of a toolbox design, something we can all relate to. It's a really straightforward, clever way of getting the parts into the machine. And it doesn't take up a large footprint. The idea was it could technically be moved from one machine to another, if ever that was necessary.”

Although that flexibility may prove valuable down the road, Sean McCarthy emphasizes that improving efficiency is the primary goal. “What it gets down to is going from a 70% utilization rate to 95%. Sure, 75% is acceptable, but 90% or 90-plus is just that much better. Now, we're utilizing almost all of the uptime available from the machine itself, rather than having it sit idle while parts are loaded and unloaded.”

Keeping Jobs At Home

Along with maintaining a competitive position, McCarthy is also keen on retaining the valuable employees WWF has now. That's essential, he notes, because hiring manufacturing workers is a real challenge these days.

“We look at every robotic system as equivalent to hiring two people,” he reasons, “because we can adapt it to the first shift and the second shift. So obviously, as we automate, we will need fewer operators in the CNC department.”

On the flip side, McCarthy says, “it's especially hard to find screw machine operators. We have 40 screw machines here, and we have a couple of very good operator candidates in the CNC department. As we automate, I can move them into the screw machine department where they'll have an opportunity to learn new skills and make more money.”

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Striking A Profitable Balance

In the end, McCarthy says, it’s all about balance. “You know, if we don’t have the facilities overseas, we don’t have a business. We try to promote as much domestic manufacturing as we can, but you have to be competitive. Expanding into this type of automated load/unload system is allowing us to manufacture more here in the U.S. versus shipping jobs overseas.”

He proudly adds, “At World Wide Fittings, we continue to manufacture a majority of our product under our control. And we’re continuing to expand our manufacturing capabilities to service our customers, both globally and domestically.”

To that end, he says Mitsubishi Electric offered the most complete and competitive solution, even though it wasn’t the least expensive. “I think the return on investment is going to be less than 24 months. Bottom line, they’re helping us expand our domestic manufacturing and keep it at a competitive level. That’s good for us, good for our employees, and good for the country.”

AUTOMATION SOLUTION INGREDIENTS

- **RV-8CRL vertically articulated robot**
- **GOT Series human-machine interface (HMI)**
- **Custom load/unload system**

NEXT STEPS

For more information or a free consultation with an automation engineer, please

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